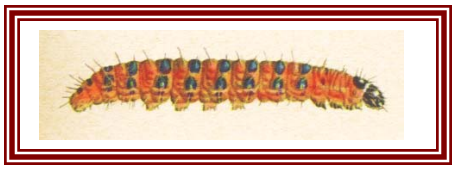
Cactoblastis cactorum Activities Report for June 2006





Joel Floyd, USDA-APHIS-PPQ-EDP, Riverdale, MD

MEETINGS/BRIEFINGS/COMMUNICATIONS. A meeting was held in Pensacola, FL to discuss operational plans for the rest of this season and next. In attendance were Paul Hornby, Acting Florida State Plant Health Director, Maurice Duffel, PPQ TDY supervisor, Stephen Hight and Jim Carpenter, ARS, Ken Bloem and Ron Weeks, CPHST, Joel Floyd, PPQ Headquarters, and Victor Maddox of MSU GeoResources Institute.

SURVEY. USDA-PPQ in Louisiana and Texas have identified new sites to set up traps for surveys this season along the Gulf Coast.

REGULATION. The two regulatory work-plans in the APHIS Regulatory Analysis and Development staff are undergoing final review before going to the legal review by the Office of General Council. Please see previous reports for description of the work-plans.

FLORIDA NURSERYSTOCK INFESTATION: The Florida Department of Food and Consumer Services, Division of Plant Industry detected *C. cactorum* in an Opuntia nursery plant being sold at a larger retail outlet in Hillsborough County, FL. It was traced back to a wholesaler in Homestead, FL and trace-forward information of the shipment lot to other retailers is currently being gathered.

OUTREACH. An article on *Cactoblastis* and USDA's efforts appeared in The Nature Conservancy Magazine, Summer, 2006 issue.

PPQ FIELD ACTIVITY: Maurice Duffel continued his TDY from the Citrus Canker program along with other program workers, Steve Bobstedt and Donald Smith to work with Stephen Hight in Ft. Morgan and Bon Secour removing infested *Opuntia* material. In the last two weeks of the month, they removed and destroyed over 2,740 lbs. of infested host plants. The US Fish & Wildlife Service will approve our request for sterile release at Bon Secour Wildlife National Refuge. Maurice has been working to get the office equipped with computer and telephone hook-up. Two pick-up trucks were secured from the Mobile, AL PPQ office thanks to Bill Moore, SPHD of Alabama. Craig Hinton, of the CPHST Gulfport Lab has continued to help Stephen Hight with trapping and host removal at Dauphin Island and Little Dauphin Island, Alabama.

TECHNICAL LIAISON. Stephanie Bloem collected and compiled all reports for June program activities. Report was translated to Spanish for distribution to collaborators at SAGARPA/SENASICA.

Stephen Hight, USDA-ARS-CMAVE Laboratory, Tallahassee, Florida
Jim Carpenter, USDA-ARS-CPMRU Laboratory, Tifton, Georgia

SIT VALIDATION. The spring cactus moth flight period ended in late May at all SIT Validation Sites. Servicing of all traps continued at least once per week during June. The summer flight began in mid-late June, with the first catch noted at Pensacola Beach (15 males) on 14 June. Total and average monthly trap catch of wild *C. cactorum* for each site is presented in Table 1. The average number of wild moths found per trap in June is based on weekly averages over 5 weeks (28 May – 30 June). Occasionally, not all traps were visited at each site each week due to locked gates or weather destroyed traps. Comparisons between sites need to be made with caution since traps at Little Dauphin Island and Ft. Morgan were not established in a grid as were traps at other sites. Releases of sterile *C. cactorum* were made in Alabama at Little Dauphin Island and Ft. Morgan on 30 June (Table 2). These releases occurred before wild males from the summer flight were caught in traps. Release and recapture information at Ft. Morgan is presented in Table 3 and Figs. 1 and 2.

Table 1. Wild *Cactoblastis cactorum* (Cc) caught in traps during June 2006 (28 May – 30 June).

Location	Dauphin Is., AL	Little Dauphin Is., AL	Ft. Morgan, AL	Pensacola Beach, FL	Okaloosa Is., FL	St. George Is., FL
# Traps	53	5	16	70	34	53
# Wild Cc	0	0	0	156	17	54
Avg. # Wild Cc/Trap	0	0	0	0.4	0.1	0.2

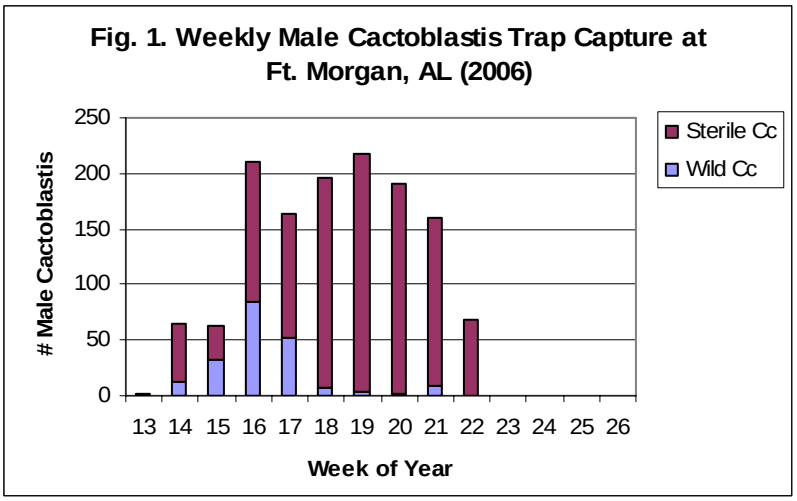
Table 2. June release totals of sterile *Cactoblastis cactorum* made at three Alabama sites.

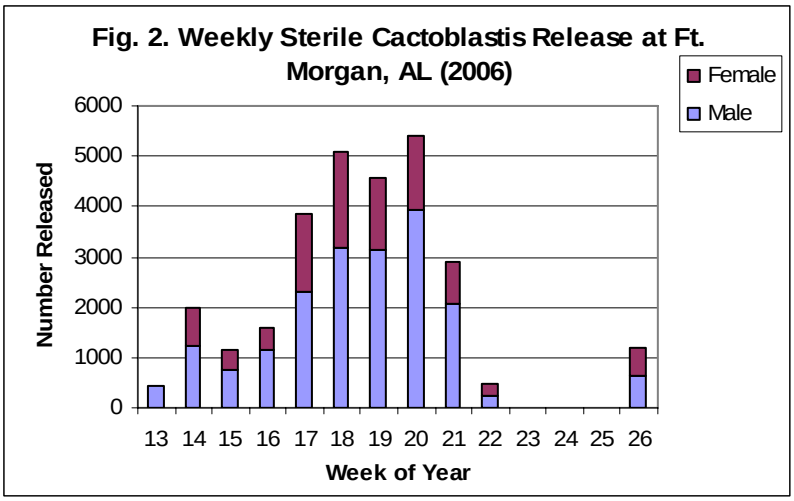
LOCATION	NUMBER OF STERILE Cc RELEASED		
	♂	♀	TOTAL
Ft. Morgan, AL	861	804	1665
Little Dauphin Island, AL	406	282	688
Dauphin Island, AL	0	0	0

Table 3. Weekly male *Cactoblastis cactorum* (Cc) trap capture, number of male and female sterile moths released, and percent sterile males released that were recaptured at Ft. Morgan, AL, February-June 2006.

MONTH	WEEK OF YEAR	Cc CAPTURED		STERILE Cc RELEASED		% STERILE ♂ Cc RECAPTURED
		WILD ♂ Cc	STERILE ♂ Cc	♂	♀	
February	8	0	--	--	--	--
March	12	0	--	--	--	--
March	13	1	0	443	0	--
April	14	13	52	1236	758	4.2
April	15	32	31	747	422	4.2
April	16	84	127	1144	456	11.1
April	17	52	110	2312	1547	1.5
May	18	7	189	3163	1942	6.0
May	19	3	214	3139	1433	6.8
May	20	2	189	3925	1475	4.8
May	21	9	151	2073	836	7.3
June	22	0	68	245	226	27.8
June	23	0	0	0	0	0
June	24	0	0	0	0	0
June	25	0	0	0	0	0
June	26	0	0	616	578	0*

* Traps checked the following week.





ECOLOGICAL AND QUALITY CONTROL FIELD STUDIES. Flight Periods and Degree-Day Model. Weekly-collected trap bottoms sent by collaborators from the 5 sites were scored, analysis updated, and outcomes forwarded back to collaborators.

COLONY MAINTENANCE, BUILD-UP AND MASS-REARING. Cladode Rearing: 100,530 eggs were collected and 25,921 larvae were set-up during June. Approximately 49,650 pupae were collected and 39,700 moths emerged this month.

Artificial Diet Rearing: Because of continued problems with virus in the South Africa colony, we decided to discard this colony. Late instar larvae lost to virus during June, U.S. colony approx. 71,000. Egg collection for June was approx. 17,000 and about 25,000 eggs were set on diet.

Rearing on cladode continues to be robust. Rearing on artificial diet, however, continues to amplify the challenges we face in mass rearing of *C. cactorum* (i.e. disease, low fecundity, reduced mating, etc.). We are preparing for our rearing workshop to be held in Tifton, GA, 18-19 July 2006, during which time invited scientists will study these challenges to mass rearing *C. cactorum* and develop recommendations.

ADDITIONAL ACTIVITIES. Trapping Beyond Leading Edge. Trapping supplies were sent to Carol Motloch (Texas, APHIS-PPQ).

R. Heath, N. Epsky, USDA-ARS-SHRS Laboratory, Miami, Florida

ACTIVITIES AND ACCOMPLISHMENTS. Research activity this month focused on chemical analysis of gland extracts. Three shipments of pupae were received from Tifton, GA. Glands from calling females moths (1-2 d old) were removed and chemically extracted. Three sets of gland extracts were obtained, which consisted of 25, 31 and 22 glands per set. Development of the large volume injection technique is continuing and over 50 gas chromatography analyses were conducted as part of this research for chemical analysis of the gland extracts.